

### / Descriptions

SOP-7 ,BRAD76225SA PSR PWM

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In a SOP-7 Plastic Package ,BRAD76225SA is a high performance Primary Side Regulation (PSR) PWM power switch with high precision CV/CC control ideal for charger applications.

### / Features

- ◆ 800V BJT Built-in 800V Power BJT.
  - ◆ PWM/PFM Multi-Mode PWM/PFM Control.
  - ◆ Fast Dynamic Response.
  - ◆ Built-in Dynamic Base Drive.
  - ◆ Audio Noise Free Operation.
  - ◆  $\pm 5\%$   $\pm 5\%$  CC and CV Regulation.
  - ◆ 75mW Low Standby Power<75mW.
  - ◆ Programmable Cable Drop Compensation (CDC) in CV Mode.
  - ◆ AC Built-in AC Line & Load CC Compensation.
  - ◆ SLP OCP LEB
  - ◆ OTP VDD
- Build in Protections: Short Load Protection(SLP) Cycle-by-Cycle Current Limiting(OCP) Leading Edge Blanking(LEB) On-Chip Thermal Shutdown(OTP) VDD OVP & UVP & Clamp.
- ◆ QR Quasi-Resonant mode of operation
  - ◆ Halogen-free Product.

### / Applications

- ◆ Battery Chargers for Cellular Phones.
- ◆ AC/DC LED AC/DC Power Adapter and LED Lightings.

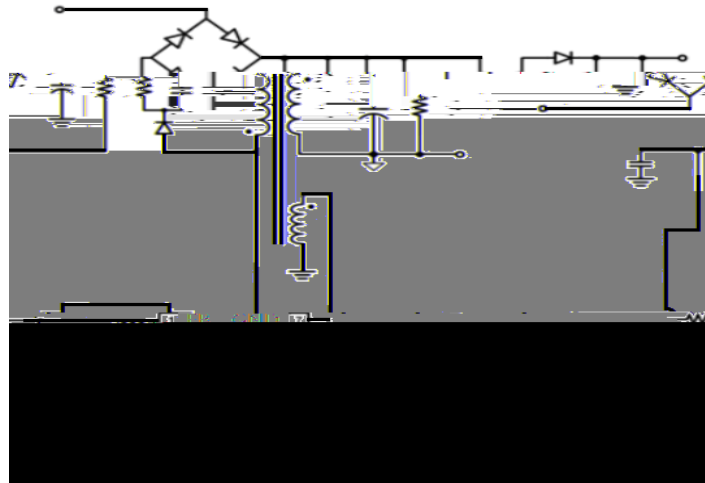
### / Product Series

	230V	
BRAD76225CSA	7W	SOP-7
BRAD76225DSA	5W	SOP-7
BRAD76225ESA	3W	SOP-7

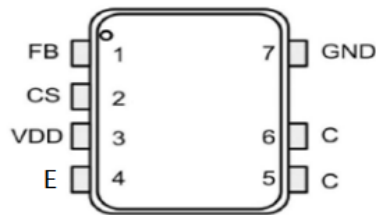
### / Marking

/ See Marking Instructions.

**/ Typical Application Circuit**

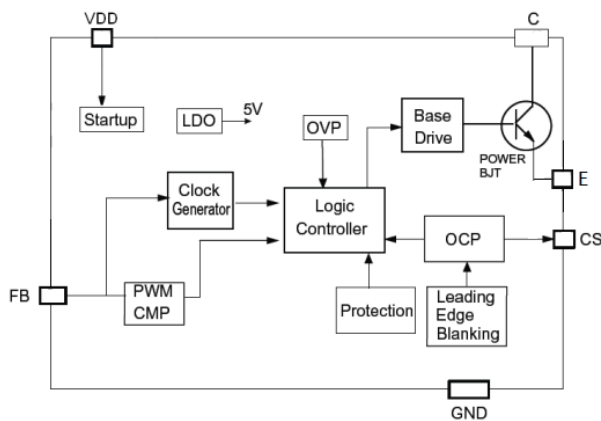


**/ Pinning & Description**



Pin Number	Pin Name	Description
1	FB	
2	CS	
3	VDD	
4	E	BJT
5 6	C	BJT
7	GND	

**/ Block Diagram**



## / Absolute Maximum Ratings(Ta=25 )

Parameter	Value	Unit
C Pin Voltage Range	-0.3 to 800	V
V <sub>DD</sub> DC Supply Voltage	-0.3 to 27	V
CS Voltage Range	-0.3 to 6	V
FB Voltage Range	-0.3 to 6	V
Thermal Resistance Junction-ambient	95	/W
Maximum Junction Temperature	150	
Operating Temperature Range	-40 to +125	
Storage Temperature Range	-65 to +150	
Lead Temperature (Soldering,10sec.)	260	

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Note 1: If the device operating conditions over the maximum rating of the above-mentioned conditions, may cause permanent damage to the device. The above parameters is only part of the operating conditions the maximum, we do not recommend the device running outside the scope of this specification. If the device to work long hours under the condition of absolute maximum limit, its stability may be affected.

## / Electrical Characteristics(Ta=25 VDD=20V if not otherwise noted)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
<b>Supply Voltage Section(V<sub>DD</sub> Pin)</b>						
Start-up current into VDD pin	I <sub>VDD_st</sub>	V <sub>DD_ON</sub> -1 V		3	20	uA
Operation Current	I <sub>VDD_Op</sub>			0.8		mA
VDD Under Voltage Lockout Exit	V <sub>DD_ON</sub>	VDD Rising	15	16	17	V
VDD Under Voltage Lockout Enter	V <sub>DD_OFF</sub>	VDD Falling	3.8	4.2	4.6	V
VDD OVP Threshold	V <sub>DD_OVP</sub>			26		V
<b>Control Function Section (FB Pin)</b>						
Internal Error Amplifier (EA) Reference Input	V <sub>FB</sub>		1.975	2.0	2.025	V
Minimum OFF time	T <sub>off_min</sub>			2		us
Maximum frequency	F <sub>max</sub>			100		KHz
Minimum frequency	F <sub>min</sub>			350		Hz

**/ Electrical Characteristics(Ta=25 VDD=20V if not otherwise noted)**

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Maximum Cable Drop Compensation (CDC) Current	I <sub>Cable_max</sub>			45		uA
<b>Current Sense Input Section (CS Pin)</b>						
CS Input Leading Edge Blanking Time	T <sub>LEB</sub>			350		ns
Minimum overcurrent protection threshold	V <sub>TH_OCPmin</sub>			500		mV
Maximum overcurrent protection threshold	V <sub>TH_OCPmax</sub>			550		mV
<b>Power BJT Section (C Pin)</b>						
Collector-Base Breakdown Voltage	V <sub>CBO</sub>		800			V

**/ Functional Description**

BRAD76225SA (PSR)

VDD

VDD

BRAD76225SA BJT  
BJT

BJT FB FB 2/3  
2.0V

BRAD76225SA VFB CS CS CS

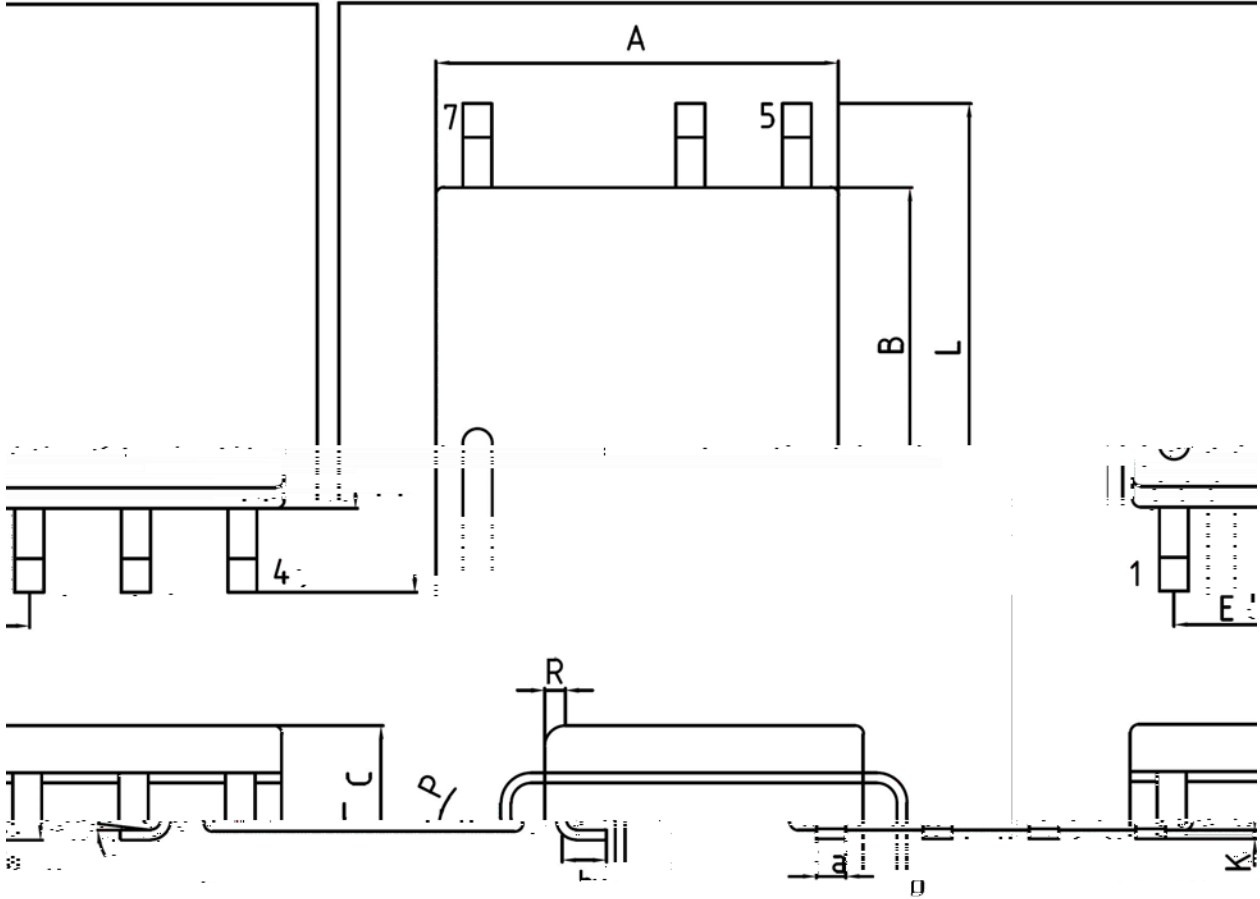
BRAD76225SA FB

FB  
150

BRAD76225SA

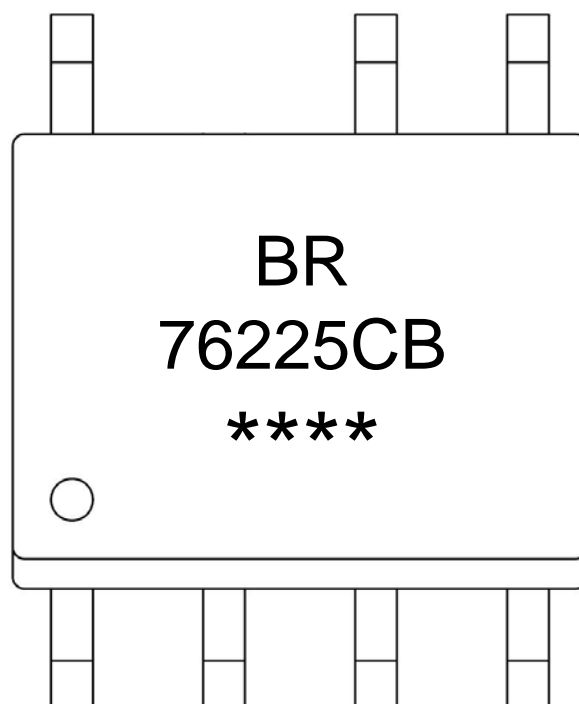
/ Package Dimensions

单位: mm SUP-1



Dimensions In Millimeters		Symbol	Dimensions In Millimeters		Symbol
Min	Max		Min	Max	
4.80	5.00	C	1.35	1.75	A
B	5.80		4.00	4.40	
L	5.80		6.20	6.60	
E	1.27BSC		P	0°	7°
K	0.12	0.22	b	0.40	1.25

/ Marking Instructions



BR

76225

C

B

BJT

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Note

BR

Company Code

76225

Product Type

C

Distinguishing output power corresponding to product series table, varies with product type suffix

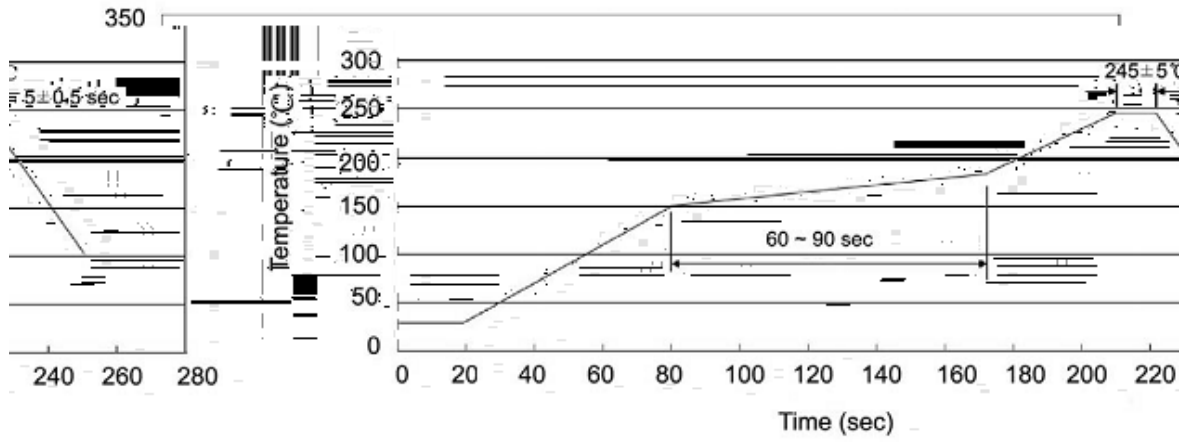
B

Distinguish internal power BJT, or default consistent with product model suffix

\*\*\*\*:

Lot No.Code, code change with Lot No.

( ) / Temperature Profile for IR Reflow Soldering(Pb-Free)



Note:

- |   |       |     |           |          |   |
|---|-------|-----|-----------|----------|---|
| 1 | 150   | 180 | 60        | 90sec;   | 1.Preheating:150~180 , Time:60~90sec.   |
| 2 | 245±5 |     | 5±0.5sec; |          | 2.Peak Temp.:245±5 , Duration:5±0.5sec. |
| 3 |       |     | 2         | 10 /sec. | 3. Cooling Speed: 2~10 /sec.            |

/ Resistance to Soldering Heat Test Conditions

260±5                      10±1 sec.                      Temp.:260±5                      Time:10±1 sec

/ Packaging SPEC.

/ REEL

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm)		
	Units/Reel 只/卷盘	Reels/Inner Box 卷盘/盒	Units/Inner Box 只/盒	Inner Boxes/Outer Box 盒/箱	Units/Outer Box 只/箱	Reel	Inner Box 盒	Outer Box 箱
SOP-7	4,000	2	8,000	6	48,000	13 x12	360x360x50	380x335x366

/ Notices